APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,993	02/12/2001	Stephen J. Elliott	10002385-1	1954

7590 08/09/2005	EXAMINER
HEWLETT-PACKARD COMPANY	MAIS, MARK A
Intellectual Property Administration	

ART UNIT	PAPER NUMBER
2664	

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DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/782,993	STEPHEN J. ELLIOT
	Examiner	Art Unit	
	Mark A. Mais	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 November 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213..

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-20</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>02 November 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form

the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by El-Batal et al. (USP

6,625,144).

3. With regard to claims 1 and 4, El-Batal et al. discloses a method for facilitating

communication over a fibre channel (FC) system **[Fig. 1, the RAID controller is**

coupled to the host processor via a SCSI bus or Fibre Channel interface 141 and

disk drives coupled via SCSI bus or Fibre Channel interface 140; col. 3, lines 9-15;

see also **col. 4, lines 20-26]** via a low bandwidth interface connected to a user device

[Figs. 1-3, Examiner interprets the FC system as the RAID controller system; *see*

also **Abstract]** comprising the steps of:

receiving first information from the FC system, wherein the first information is associated with a storage device disposed in the FC system [a **RAID controller inherently receives information about the disk drives in the RAID system**];

processing the first information to identify information intended for the user device [**the RAID controller inherently processes information intended for the user device—either another disk drive or, ultimately, host computer 102 of Fig. 1;** *see also* **Figs. 3-4**];

storing the identified information in a buffer as first stored information [**UARTs inherently have up to 16 byte buffers**]; and

communicating the first stored information via the low bandwidth interface to the user device [**Figs. 5-7; the UART communicates with host computer 102 via RS-232 (Fig. 5) via the low bandwidth DB9 Conn.**].

4. With regard to claim 2, El-Batal et al. discloses receiving second information via the low bandwidth interface from the user device for transmission over the FC system, wherein the second information is associated with a storage device disposed in the FC system [a **RAID controller inherently receives information about the disk drives in the RAID system**];

storing the second information in a buffer as second stored information [**UARTs inherently have up to 16 byte buffers**]; and

communicating second stored information via the FC system after an amount of

second stored information exceeds a predetermined value **[Figs. 5-7; the UART**

communicates with host computer 102 via RS-232 (Fig. 5) via the low bandwidth

DB9 Conn. and must pass buffered information via the FC Fibre Channel (or SCSI

channel) after predetermined number of clocking cycles after initially passing the

first stored information via the UART buffers].

5. With regard to claims 9-12, El-Batal et al. discloses a system for facilitating

communication over a fibre channel (FC) system **[Fig. 1, the RAID controller is**

coupled to the host processor via a SCSI bus or Fibre Channel interface 141 and

disk drives coupled via SCSI bus or Fibre Channel interface 140; col. 3, lines 9-15;

see also **col. 4, lines 20-26]** via a low bandwidth interface connected to a user device

[Figs. 1-3, Examiner interprets the FC system as the RAID controller system; *see*

also **Abstract; wherein the RAID controller system uses the RAID controller (array**

controller) and the user device is host computer 102], comprising:

a buffer**[UARTs inherently have up to 16 byte buffers]**;

an interface to the FC system **[Fig. 1, the RAID controller is coupled to the host**

processor via a SCSI bus or Fibre Channel interface 141 and disk drives coupled via

SCSI bus or Fibre Channel interface 140; col. 3, lines 9-15; *see also* **col. 4, lines 20-**

26],

a low bandwidth interface **[Figs. 5-7; the UART communicates with host**

computer 102 via RS-232 (Fig. 5) via the low bandwidth DB9 Conn.]; and

a microprocessor **[RAID controller]**,

wherein the microprocessor is disposed to arbitrate access to the FC

system to communicate information received from the low bandwidth interface

when an amount of received information exceeds a predetermined value **[Figs. 5-**

7; the UART communicates with host computer 102 via RS-232 (Fig. 5) via

the low bandwidth DB9 Conn. and must pass buffered information via the

FC Fibre Channel (or SCSI channel) after predetermined number of

clocking cycles after initially passing the first stored information via the

UART buffers],

wherein the microprocessor causes information received from the FC

system to be buffered before communication via the low bandwidth interface

[UARTs inherently have up to 16 byte buffers; Fibre Channel uses Fibre

Channel Layer 2 (FC-2) for flow control purposes to prevent buffer

overflow; moreover, the RAID controller inherently uses FC network

protocols], and

wherein communicated information is associated with a storage device

disposed in the FC system **[a RAID controller inherently receives information**

about the disk drives in the RAID system].

6. With regard to claims 17-20, El-Batal discloses a system for facilitating

communication between Fibre channel arbitrated loop topologies [**Fig. 1, the RAID**

controller is coupled to the host processor via a SCSI bus or Fibre Channel interface

141 and disk drives coupled via SCSI bus or Fibre Channel interface 140; col. 3,

lines 9-15; *see also* **col. 4, lines 20-26]** via a low bandwidth interface connected to a user

device [**Figs. 1-3, Examiner interprets the FC system as the RAID controller system;**

see also **Abstract; wherein the RAID controller system uses the RAID controller**

(array controller) and the user device is host computer 102], comprising:

a buffer ; [**UARTs inherently have up to 16 byte buffers]**;

a first interface to a first Fibre Channel arbitrated loop topology [**Fig. 1, the**

RAID controller is coupled to the host processor via a SCSI bus or Fibre Channel

interface 141 and disk drives coupled via SCSI bus or Fibre Channel interface 140;

col. 3, lines 9-15; *see also* **col. 4, lines 20-26**];

a second interface to a second Fibre Channel arbitrated loop topology [**Figs. 1**

and 4; interpreted as the controller to controller communication for which each

RAID controller arbitrates their own Fibre Channel loops];

a low bandwidth interface [**Figs. 5-7; the UART communicates with host**

computer 102 via RS-232 (Fig. 5) via the low bandwidth DB9 Conn.]; and

a microprocessor [**RAID controller]**,

wherein the microprocessor facilitates communication between the

first and second Fibre Channel arbitrated loop topologies [**RAID controller to RAID**

controller communications],

wherein the microprocessor is disposed to arbitrate access to at least one

of the first and second Fibre Channel arbitrated loop topologies to communicate

information received from the low bandwidth interface [**each controller can hold

the other in reset, col. 5, lines 35-47**], and

wherein the microprocessor causes information received from at least one

of the first and second Fibre Channel arbitrated loop topologies to be buffered

before communication via the low bandwidth interface [**UARTs inherently have

up to 16 byte buffers; Fibre Channel uses Fibre Channel Layer 2 (FC-2) for

flow control purposes to prevent buffer overflow; moreover, the RAID

controller inherently uses FC network protocols**].

7. With regard to claims 3 and 15, El-Batal et al. discloses utilizing flow control

procedures associated with the FC system to prevent a first buffer from being overwritten

[**Fibre Channel uses Fibre Channel Layer 2 (FC-2) for flow control purposes to

prevent buffer overflow**].

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 5-8, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over
El-Batal et al. (USP 6,625,144) as applied to claims 1-4, 9-13, 15, and 17-20 above, and
further in view of Hunt et al. (USP 6,112,276).

10. With regard to claims 5-8, 14, and 16 El-Batal discloses a RS-232 connection to host
computer 102, as noted above in claims 1, 9 and 17. However, El-Batal et al. does not
specifically disclose a diagnostic PC utilized to diagnosis disk array operations further
including the step of emulating a disk array. Hunt et al. discloses a module that performs
remote diagnostics via a modem located at a customer's facility **[col. 11, lines 23-28]**.
Both El-Batal et al. **[as noted in claim 1 above]** and Hunt et al. pertain to RAID disk
arrays using Fibre Channel to transfer data **[see, for example, Hunt et al., col. 3, line 1;
col. 4, lines 13-23]**. Moreover, El-Batal et al. discloses maintenance access
communications **[col. 3, lines 53-56]**. Thus, it would have been obvious to one of
ordinary skill in the art at the time of the invention to have used a processor to diagnose
the RAID disk array(s) in order to perform diagnostics and, ultimately, to communicate
the status of the RAID disk controller, and the RAID disk arrays to the user **[even to a
remote location, Hunt et al., col. 13, lines 38-39; which inherently includes an
internet service provider]**.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Mark A. Mais whose telephone number is (571) 272-
3138. The examiner can normally be reached on 6:00-4:30.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number
for the organization where this application or proceeding is assigned is 703-872-9306.

13. Information regarding the status of an application may be obtained from the Patent
Application Information Retrieval (PAIR) system. Status information for published
applications may be obtained from either Private PAIR or Public PAIR. Status
information for unpublished applications is available through Private PAIR only. For
more information about the PAIR system, see http://pair-direct.uspto.gov. Should you
have questions on access to the Private PAIR system, contact the Electronic Business
Center (EBC) at 866-217-9197 (toll-free).

July 11, 2005

WELLINGTON CHIN
ERVISORY PATENT EXAMINE